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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,701	12/11/2000	Eiji Kasutani	Q62251	2921

7590 04/21/2004
SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

CHANG, JON CARLTON

ART UNIT PAPER NUMBER

2623

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,701

Applicant(s)

KASUTANI, EIJI

Examiner

Jon Chang

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-8,11,13-16,18-21 and 23-27 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 2,3,5-8,11,13-15,18-20,23-25 and 27 is/are allowed.
6) ☒ Claim(s) 16,21 and 26 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Applicant's Amendment and Arguments

1. The amendment filed January 21, 2004 has been entered and made of record. The amendment cancels claims 1, 4, 9, 10, 12, 17 and 22, and rewrites claims 5, 6, 7, 11, 13, 16, 18, 21, 23 and 26 in independent form. Claims 2, 3, 5-8, 11, 13-16, 18-21, 23-27 are currently pending.

Claims 5, 6, 7, 11, 13, 18, 23 were previously indicated as containing allowable subject matter (see last Office Action, paper no.3), and therefore these claims, as well as the claims which depend from them, are now allowable.

Applicant's arguments (page 20, next to last paragraph) with regard to Yue as applied to claim 26 are convincing. The rejection of claim 26 under 35 U.S.C. § 102(b) relying on Yue is therefore withdrawn. The Examiner would like to point out that in the last Office Action, he did not intend to reject claim 26 using Yue. Claim 26 was inadvertently included in the rejection relying on Yue.

Applicant's arguments with regard to Lee, as to applied to claims 16, 21 and 26, have been fully considered, but they are not deemed to be persuasive for at least the following reasons. With regard to claims 16 and 26, Applicant argues (top of page 22) that there is no teaching or suggestion in Lee of using the entire resized image for producing a discrete cosine transform coefficient. Applicant makes a similar argument with regard to claim 21 on page 24, last paragraph. The Examiner disagrees. Lee meets the language of the claims in either of two ways:

1) Lee teaches normalizing the size of the image (column 2, lines 9-11). This is a resizing of the image. Lee then performs a DCT on the image (column 2, lines 38-39).

Lee does this by first dividing the image into sub blocks (column 2, lines 34-35), and obtaining a DCT coefficient of each sub block (column 2, lines 38-39). This is the way in which DCT's are performed on entire images, as is well known in the art. For DCT processing, as is known in the art, an entire image is first divided into blocks, and then the DCT coefficients are calculated for each block. This is shown for example in Gonzalez, section 6.5.2. Note in particular the first two paragraphs of the section, as well as Fig.6.28. Gonzalez is not being relied upon for any rejection. It is only being cited to show what is inherent in the DCT process.

2) Lee teaches dividing the image into sub blocks (column 2, lines 34-35). This in itself is a resizing of the image. This agrees with the manner in which Applicant's invention resizes an image. Note for example, claim 13, which recites "an image size resizing means for resizing image data..." and "wherein said image size resizing means comprising a block dividing means for partitioning said image data into blocks,..." Lee then teaches performing the DCT on each of the sub blocks in their entirety (column 2, lines 38-39).

Therefore, the rejections of claims 16, 21 and 26 will be maintained.

Comment Regarding Information Disclosure Statement

2. With regard to the Information Disclosure Statement filed (December 4, 2003), the Examiner wishes to point out it that, while the references provided have been considered, they do not appear to be related to the current invention. They do not even seem to be in the same environment. Additionally, Applicant has provided what

appears to be a partial translation of an opinion on patentability from a foreign patent office. However, the references provided by Applicant do not correspond to the references mentioned in the translation.

Claim Objections

3. Claims 5-7, 11 and 16 are objected to because of the following informalities:

a) Claim 5, at lines 7 and 13, recites, "transform processing of coefficient." While this is understood, for the sake of clarity and to avoid any potential ambiguity, the Examiner suggests that this be amended to read, "coefficient transform processing" or the like. The same problem exists for claims 6, 7 and 11.

b) In claim 16, at line 16, "image" should be inserted after "resized".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 16 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,345,275 to Lee.

As to claim 16, Lee discloses an image retrieval device for retrieving an image being similar to an inquired image from images stored in an image database comprising:

a first coefficient transforming means for transforming a first group of image feature descriptors extracted from image data accumulated in said image database and then generating a second group of image feature descriptors to be used for calculating similarity (column 1, lines 61-65; column 2, lines 10-12; column 2, lines 19-20. The patent is only explicit with regard to transforming for the feature descriptors of the inquired image, while being silent with regard to transforming the feature descriptors for images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles are created for the inquired image via the transforming, column 2, lines 15-18. Presumably, the profiles for the image in the database are created in the same way, and therefore the description of the transforming means is applicable to images in the database.);

a second coefficient transforming means for transforming a first group of image feature descriptors extracted from image data of said inquired image and then generating a second group of image feature descriptors to be used for calculating similarity (column 1, lines 61-65; column 2, lines 10-12); and

a similarity calculating means for calculating similarity by comparing said second group of image feature descriptors for each piece of image data generated by said first coefficient transforming means with said second group of image feature descriptors transformed by said second coefficient transforming means (column 2, lines 53-54).

Lee further discloses that the first and second coefficient transforming means each resize image data accumulated in said image database and/or inquired image, and produce a discrete cosine transform coefficient by performing a discrete cosine transform on an entirety of the resized image, and use the produced discrete cosine transform coefficient as an extracted first group of image feature descriptors (column 2, lines 8-10; column 2, lines 35-39).

Regarding claim 26, see the remarks provided above for claim 16.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Claim 21 is similar to claim 16, but requires only a single coefficient transforming means. See the remarks provided above for claim 16 regarding common elements.

Lee discloses a single coefficient transforming means (e.g., Fig.1, element 106), but does not disclose that that coefficient transforming means transforms the feature vectors for the images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles are created for the inquired image via the transforming, column 2, lines 15-18. Presumably, the profiles for the image in the database are created in the same way. It would have been obvious to one of ordinary skill in the art to utilize the coefficient transforming means to perform the transforming of the coefficients of the images in the database, because this would keep system size and cost down. For the other features of claim 21, see the additional discussion for claim 16.

Allowable Subject Matter

8. Claims 2-3, 5-8, 11, 13-15, 18-20, 23-25 and 27 are allowed.

Reference Cited

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"Digital Image Processing" by Gonzalez et al. is cited for its teaching on the DCT.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Chang whose telephone number is (703)305-8439. The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2623

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jon Chang
Primary Examiner
Art Unit 2623

Jon Chang
April 17, 2004